INTEROFFICE MEMORANDUM

TO:	MERLE JEFFERSON SR., EXCECUTIVE DIRECTOR JEREMY FREIMUND, WATER RESOURCES MANAGER
FROM:	MONIKA LANGE, NATURAL RESOURCE ANALYST
SUBJECT:	**NOVEMBER 13, 2012 NOOKSACK RIVER PUMP HOUSE OIL SPILL RESPONSE DRILL (NPS-10)**
DATE:	11/19/12
CC:	SGT ED CONWAY

The purpose of this memorandum is to summarize the spill drill that took place on November 13, 2012.

Participants:
The following LNR and LNPD staff participated in the drill:

1. Jeremy Freimund, LNR Water Resources Manager
2. Frank Lawrence III, LNR Natural Resources Specialist
3. Jamie Mattson, LNR Water Resources Specialist II
4. Victor Johnson, LNR Natural Resources Specialist
5. Hilary Cosentino, LNR Water Resources Technician III
6. Monika Lange, LNR Natural Resources Analyst
7. Sergeant Ed Conway, LNPD
8. Officer David Savage, LNPD
9. Officer Jay Martin, LNPD
10. Don Kruse, LNR Project Biologist
11. Frank Bob, LNR Restoration Assistant
12. Gregg Dunphy, LNR Forest Fish Manager
13. Chris Phair, LNR Restoration Technician II

Ken Schacht from the Marine Spill Response Corporation (MSRC) participated in the drill and provided suggestions during the deployment.

Drill Strategy:
The exercise was a half-day oil spill response drill with boom deployment. The goal of the drill was to deploy boom strategy NPS-10 of the Geographic Response Plan (GRP) for the North Puget Sound (NPS) region (see attached diagram). NPS-10 calls for deflection boom to be placed in front of the hatchery pump house along the right bank (looking downstream) just downstream from the Marine Drive Bridge over the Nooksack River. Its purpose is to deflect oil moving down the river from a pipeline accident or other incident that releases oil into the river above the bridge.

Drill Goals:

1. Test NPS-10 which is only identified in the GRP but is not well described (e.g., boom or equipment requirements are not identified) and has not been tested before.
2. Determine the length and configuration of boom needed.
3. Determine shore anchor points.
4. Determine boom location relative to the log jam and sand bar that has formed at the bridge pilings closest to the pump house.
5. Practice team work.

Briefing and Scenario:
During the pre-meeting held in the Sam Cagey room at the LNR office, Jeremy outlined the scenario for the day and addressed each of the agenda items. In the scenario, oil from a storage tank that failed at the Kinder-Morgan facility at East Smith Road and Hannegan Road could not be contained as it moved down Deer Creek and 10-Mile Creek and is threatening to enter the Nooksack River. The Unified Command for the incident directed the Lummi Spill Response Team to deploy NPS-10 to protect the water intake for the Lummi Bay Hatchery. The team discussed possible boom placement options.

Briefing Agenda:
1. Check in/Introductions
2. Briefing/Scenario
3. ICS Review
4. Safety (Rocks, Water [PFDs], Bees, Hypothermia, Trash/Needles at Launch Site)
5. Deployment (Boom)
6. Debriefing/Lunch
7. Check out

Timeline of the November 13, 2012 Oil Spill Response Drill

Time	*Event*
10:05 am	Pre-meeting with explanations of scenario and goals, ICS refresher, safety briefing, and job assignments.
10:25 am	Mobilization
10:45 am	The LNR Harbercraft leaves the Central Campus.
10:51 am	The boom trailer leaves Central Campus.
10:50 am	The Harbercraft arrives at the launch site on the river bank opposite the pump house. The launch site was very sandy/muddy and the Nissan Titan pulling the boat sunk into the road way. The boat could not be launched from this launch site.
10:56 am	The LNPD jet boat arrives at the site (launched at Fish Point).
10:57 am	The boom trailer arrives at the pump house site.
Approx. 11:15 am	100 ft of boom are unloaded, pulled by the jet boat, and fastened to an alder tree beyond the pump house inside of the log jam/sand bar. The boom is angled out with an anchor attached to the boom midpoint. The team observes the behavior of the boom and discusses alternate deployment configurations.
12:00 am	The recovery of the boom is complete.
12:10 pm	The boom trailer and Harbercraft arrive back at the Central Campus.
12:15 pm	Lunch, de-briefing, and check out.
Approx. 1:30 pm	Finishing uncoupling of the Harbercraft and re-storing of supplies. End of drill.

Results:
The following are "lessons learned" and recommendations resulting from the drill:

- The log jam and sand bar around the bridge piling extending in front of the pump house creates a shallow side channel at this location. There is enough space to deploy boom in this channel and it is not necessary to configure the boom on the outside of the log jam. Deploying boom upstream of the log jam at the bridge piling would probably create a dangerous situation due to the strong current pressing the deploying boat against the log jam and entangling boom.
- The GRP has currently no recommendation for the length of the boom. The 100 ft deployed at the drill was too short. Oil would have eddied into the area of the oil intake. The

small Danforth anchor used did not stretch out the boom straight into the current. The curve in the boom lead to turbulence and would have entrained oil under the boom. Gregg Dunphy suggested using traditional staking poles to support the angle of the boom.

- The team concluded that a double-layered boom deployment would be needed to protect this sensitive resource. The team recommendation is to use 100ft of inner boom with a layer of sorbent boom on the inside and 200 ft of outer boom both at a flat angle into the current to achieve maximum deflection.
- The bank of the river is very steep and overgrown at the shore anchor site. Attaching the shore point of the boom with a simple tie-off to a tree led to a gap between the end of the boom and shore bank where oil would be able enter. Ken Schacht from MSRC recommended to tie off the boom with a tension line at the first anchor point 50 ft into the boom and to use the shore-side 50 ft of the boom to drape over the bank to achieve a good seal against oil. This system has been recommended to the team previously and a goal of the next drill will be to practice this tie-off method.
- The sediment of the boat launch site on the opposite bank was too soft to support the Water Resources Division truck and the boat could not be launched from this site. The Fish Point boat launch served as an alternative. The LNPD jet boat was able to traverse the relatively shallow channel.
- It was noted by the shore team that the boom trailer tarp collects a lot of water. It was mostly released by driving briefly uphill.
- Generally the attendance of staff from the Lummi Bay Hatchery would be desirable for their expertise about the pump.

Supply Needs

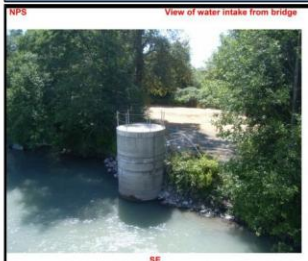
This drill and the drill on October 23, 2012 revealed the following supply needs which will be filled as soon as possible:

- Sturdier metal fence posts
- Eye protection
- Replacement for the missing post driver
- Wader leashes
- Work Gloves
- When funds become available: Custom-fabricated River Anchors for Soft Sediment

See below: NPS-8 Averages, Drill Images, Sign-up Sheet

Water Intake Nooksack River — NPS-10-Average — 4-93

NPS View of water intake from bridge



SE
N 48° 47' 29.19" W 122° 35' 26.58" WGS 84 07/30/2008 2:17:07 PM

Image-1174: Overview of water intake.

No Image Available

Site Contact Information

High Priority - contact immediate or before entering:
Contact Lummi Nation, (W) 360 384-2266, (M) 360-410-1706, (H) 360 384-2225, First number is for police, second and third is for natural resources dept.
Lummi Nation Sea Ponds, Seaponds Hatchery Manager Bob Hall (360-384-2221) Natural Resources Department Executive Director Merle Jefferson (360-410 -1706)

Closest Address:

98226

Driving Directions:

Cannot Drive to Site

Water Intake Nooksack River — NPS-10-Average — 4-92

Site Lat/Long:	N 48° 47.452' / W 122° 35.409', Sector Map NPS-6
Strategy Objective:	Notification - Keep oil from entering water intake.
Implementation:	Provide notice, Lummi Nation to put eyes on the water, if oil observed pump to be shut down.
Field Notes:	Pump only runs certain times of year, Aug.- Dec. and Feb. - May. Water in-take depth about 10 feet. The fish being fed with this water can only live a few hours with the pump off.
Resources Targeted:	water intakes
Watercourse Description:	River with tidal influence

Suggested Equipment	
Quantity	**Description**
Suggested Personnel	

Status: Visited and Not Tested 07/30/2008

Mobilization

LNPD Jet Boat

Towing boom off shore

Setting out anchor

Deployed Boom

Discussion of deployment configurations

Reloading of boom

Oil Spill Drill November 13, 2012
Check-in/out and Cell Phone Numbers

#	Name	Department/Division	Cell Phone Number	Check-in Time	Check-out Time
1.	Jeremy Freimund	LNR/Water	410-1775	10 00	
7.	Jamie Mattson	LNR/Water	815-7863	10:02	
3.	Frank Lawrence III	LNR/Water			
4.	Victor Johnson	LNR/Water	393-2269	10:06	
5.	Hilary Cosentino	LNR/Water	~~56591-490-468~~	10:00	
6.	Monika Lange	LNR/Water	296-5226	10.00	
7.	Frank Bob	LNR/Restoration	410-1783	10 00	
8.	Sgt. Ed Conway	LNPD EC	410-6813		
9.	Officer Jay Martin	LNPD	815 4201	1000	
10.	Officer David Savage	LNPD			
11.	Gregg Dunphy	TWA	410-1743	10:05	
17.	Ken Schacht	MSRC			
13.	Chris Phair	LNR/Restoration		10 AM	
14.					
15.	Don Kruse	LNR: Stock Ass.	961-0675	10:00	
16.					
17.					
18.					
19.					
20.					
21.					